

What is claimed is:

[Claim 1] 1. A method of combining a wide-image mask and loop-cutter mask, comprising the steps of:

protecting a pair of critical edges of a hard mask on a substrate with a first portion of a follow-on mask;

forming a wide-image mask on the substrate proximate the hard mask with a second portion of the follow-on mask;

removing an exposed portion of the hard mask; and
exposing the pair of critical edges of the hard mask.

[Claim 2] 2. The method of claim 1, further comprising removing a portion of the hard mask left exposed by the follow-on mask.

[Claim 3] 3. The method of claim 2, further comprising exposing the pair of critical edges of the hard mask by removing the first portion of the follow-on mask.

[Claim 4] 4. The method of claim 3, further comprising exposing the pair of critical edges of the hard mask by etching the first portion of the follow-on mask from at least either a side or a top of the first portion of the follow-on mask.

[Claim 5] 5. The method of claim 4, further comprising removing a section of a sidewall of the second portion of the follow-on mask and then replacing a portion of the removed section of the sidewall of the second portion of the follow-on mask.

[Claim 6] 6. The method of claim 5, further comprising replacing a portion of the removed section of the sidewall of the second portion of the follow-on mask so that the second portion of the follow-on mask substantially aligns with a corresponding portion of a final shape.

[Claim 7] 7. The method of claim 1, further comprising sizing the first portion of the follow-on mask to protect the critical edges of the hard mask when the follow-on mask is mis-registered by less than a predetermined amount.

[Claim 8] 8. A method of combining a wide-image mask and a loop-cutter mask, comprising the steps of:

forming a follow-on mask in a loop-cutter pattern on a portion of a hard mask, wherein the follow-on mask comprises a wide-image section and a narrow-image section;

removing a portion of the hard mask left exposed by the follow-on mask; and

removing at least a portion of the narrow-image section of the follow-on mask.

[Claim 9] 9. The method of claim 8, further comprising sizing the narrow-image section to cover a portion of the hard mask when the follow-on mask is mis-registered by less than a prescribed amount.

[Claim 10] 10. The method of claim 8, further comprising sizing the wide-image section of the follow-on mask to substantially align with a corresponding wide section of a final structure.

[Claim 11] 11. The method of claim 8, further comprising removing a portion of the hard mask left exposed by the follow-on mask.

[Claim 12] 12. The method of claim 8, further comprising removing at least a portion of the narrow-image section of the follow-on mask by etching the narrow-image section of the follow-on mask from at least either a side or a top of the narrow-image section of the follow-on mask.

[Claim 13] 13. The method of claim 12, further comprising forming a re-shaped follow-on mask by re-depositing material onto the wide-image section of the follow-on mask to substantially align the re-shaped follow-on mask with a corresponding portion of a final shape.

[Claim 14] 14. The method of claim 8, further comprising removing at least a portion of the narrow-image section of the follow-on mask by etching the narrow-image section of the follow-on mask from both a side and a top of the narrow-image section of the follow-on mask.

[Claim 15] 15. A combined wide-image and loop cutter mask, comprising:

- a follow-on mask formed over a hard mask;
- a wide-image section forming a first end of the follow-on mask; and
- a narrow-image section forming a second end of the follow-on mask, wherein the follow-on mask is configured to have the narrow-image section preferentially removed when the follow-on mask is etched.

[Claim 16] 16. The mask of claim 15, wherein the narrow-image section overlaps a critical edge of a hard mask positioned underneath the narrow-image section.

[Claim 17] 17. The mask of claim 15, wherein the narrow-image section is thinner than the wide-image section.

[Claim 18] 18. The mask of claim 15, wherein the follow-on mask is configured to protect a portion of the hard mask located underneath the follow-on mask during a hard mask etch.

[Claim 19] 19. The mask of claim 15, wherein a width of the wide-image section substantially aligns with a corresponding width of a final shape.

[Claim 20] 20. The mask of claim 15, wherein a width of the wide-image section overlaps a width of a corresponding final shape.